Microlaryngobronchoscopy (MLB) at a tertiary paediatric centre: a five year review

N. Vakharia, A. Maity, G. Bajaj, A. Hall, Y. Bajaj
Royal London Hospital, Barts Health NHS Trust, London
Corresponding author: Nilesh.Vakharia@nhs.net

INTRODUCTION

- Follow-up to a previous two-year review at our centre[1], describing the prevalence of paediatric airway conditions encountered.
- Aims:
 - Explore the prevalence of airway pathologies, including multiple level airway pathology.
 - Discuss the management of these conditions.

METHODS

- Data for patients undergoing microlaryngobronchoscopy (MLB) at The Royal London Hospital was collected prospectively between January 2012 - October 2017, a five-year period.
- Patient demographics, co-morbidities, risk factors and primary diagnosis at MLB (if any) were noted, along with any other findings.
- Findings from follow up MLBs were also recorded.

RESULTS

- During the 5 year period, 833 MLBs were performed on 367 patients.
- Mean age at first procedure was 35 months with a male preponderance (62%).
- The most common primary diagnoses were subglottic stenosis (SGS) - 92 patients, laryngeal cleft - 83 patients and laryngomalacia - 54 patients (fig. 1).
 - 30 patients (8.2%) had 2 of the above diagnoses simultaneously (table 1).
 - Normal anatomy was seen in 48 patients (13.1%).
 - 'Other' diagnoses (90 patients) included vocal cord nodules, vocal cord palsy, laryngeal papilloma and tracheomalacia.

Fig. 1 - Upper airway pathology diagnoses

Table 1 - Multi-level airway pathology

	No. patients
SGS & Laryngeal cleft	21
SGS & Laryngomalacia	4
Laryngomalacia & Laryngeal cleft	5

Fig. 2 - Management of SGS

- Of the 92 patients diagnosed with SGS, the majority were managed with serial incision and balloon dilatation (average 4.3 procedures), with 9.8% needing laryngotracheal reconstruction (fig. 2).
- A total of 57 laryngeal clefts were repaired endoscopically resulting 49% of patients established on a normal diet post-repair.

DISCUSSION

This series of patients represents the more severe end of the airway pathology spectrum from our local area. As a result, they cannot be applied to the general population. Although laryngomalacia is the most common cause of paediatric stridor^[2], this is often be managed in primary care or by paediatricians without ENT involvement. As a result, diagnosis of SGS and laryngeal cleft are made more frequently at our centre following MLB. Our data supports the use of serial incision and dilatation to safely manage the vast majority of SGS cases. We have also demonstrated improved swallowing outcomes following endoscopic repair of laryngeal cleft.

CONCLUSION

- Referrals to tertiary centres are often for patients at the extreme end of the airway pathology spectrum.
- Although laryngomalacia is the most common cause of paediatric stridor, diagnosis of SGS and laryngeal cleft are made more frequently at our centre.
- Serial incision and dilatation can be used to safely manage SGS, requiring an average of 4.3 procedures. Only a small proportion (9.8%) required laryngotracheal reconstruction.
- Despite the uncertainty surrounding the the value of laryngeal cleft repair, we have demonstrated improved swallowing outcomes, and thus the benefit of performing the procedure.

REFERENCES

- Cadd B, Yalamanchili S, Virk JS, Bajaj Y. The changing face of the paediatric microlaryngobronchoscopy (MLB): A two year prospective study. Int. J. Pediatr. Otorhinolaryngol. 2015;79(7):1111–4.
- Zoumalan R, Maddalozzo J, Holinger LD. Etiology of stridor in infants. Ann. Otol. Rhinol. Laryngol. 2007;116(5):329–34.
- Claes J, Boudewyns A, Deron P, Vander Poorten V, Hoeve H, Management of stridor in neonates and infants, B-ENT (Suppl 1) (2005) 113–122.
- Sakakura K, Chikamatsu K, Toyoda M, Kaai M, Yasuoka Y, Furuya N, Congenital laryngeal anomalies presenting as chronic stridor: a retrospective study of 55 patients, Auris Nasus Larynx 35 (4) (2008) 527–533.